

**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION**

Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)**AUG 25 2016****Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Permit**

OFFICIAL STATE USE ONLY	Site #:	110745	Permit #:	NR1603.164
Section 1. Applicant Information (individual responsible for site, signs certification below)				
Applicant Name: 1810 Broadway, LLC				
Company: 1810 Broadway, LLC			Signatory's Title or Position: Registered Agent	
Mailing Address: 311 South Weisgarber Road			City: Knoxville	State: TN Zip: 37919
Phone: 865-228-9375		Fax: 865-249-8132	E-mail: parker@hatcherhill.com	
Section 2. Alternate Contact/Consultant Information (a consultant is not required)				
Alternate Contact Name: Jason Mann				
Company: GEOServices, LLC			Title or Position: Environmental Engineering Project Manager	
Mailing Address: 2561 Willow Point Way			City: Knoxville	State: TN Zip: 37931
Phone: 865-539-8242		Fax:	E-mail: jmann@geoservicesllc.com	
Section 3. Fee (check appropriate box and submit requisite fee with application)				
<input type="checkbox"/> No Fee Submitted <input checked="" type="checkbox"/> Fee Submitted with Application Amount Submitted: \$ 500.00				
Current fee schedules for Aquatic Resource Alteration Permit processing may be found at the Division of Water Resources webpage at http://www.tn.gov/environment/permits/arap.shtml or by calling (615) 532-0625. Make checks payable to "Treasurer, State of Tennessee".				
Section 4. Project Details (fill in information and check appropriate boxes)				
Site or Project Name: 1810 N. Broadway/First Creek Stabilization			Nearest City, Town or Major Landmark: Knoxville	
Street Address or Location: 1810 N. Broadway, Knoxville, TN 37917				
County(ies): Knox		MS4 Jurisdiction: City of Knoxville	Latitude (dd.dddd): 35.9896	
			Longitude (dd.dddd): -83.9192	
Resource Proposed for Alteration: <input type="checkbox"/> Stream <input type="checkbox"/> Wetland <input type="checkbox"/> Reservoir				
Name of Water Resource: First Creek 06010201080_1000				
Brief Project Description (a more detailed description is required under Section 8): Bank stabilization of ~200 linear feet of First Creek (working with City of Knoxville)				
Does the proposed activity require approval from the U.S. Army Corps of Engineers, the Tennessee Valley Authority, or any other federal, state, or local government agency? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, provide the permit reference numbers: _____				
Is the proposed activity associated with a larger common plan of development? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If Yes, submit site plans and identify the location and overall scope of the common plan of development. Plans attached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
If applicable, indicate any other federal, state, or local permit authorizations that the overall project site (common plan of development) has obtained in the past (i.e. construction general permit coverage and/or other ARAPs): Small site (<1 acre) located within QLP jurisdiction, and bank stabilization is being required by City of Knoxville officials. USACE has declined to regulate this activity; TVA has not responded to permitting inquiries as of application date.				
Section 5. Project Schedule (fill in information and check appropriate boxes)				
Start date: November 30, 2016		Estimated end date: November 30, 2019		
Is any portion of the activity complete now? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe the extent of the completed portion:				

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The required information in Sections 6-11 must be submitted on a separate sheet(s) and submitted in the same numbered format as presented below. If any question is not applicable, state the reason why it is not applicable.

Section 6. Project Description		Attached	
		Yes	No
6.1	A narrative description of the scope of the project	<input type="checkbox"/>	<input type="checkbox"/>
6.2	USGS topographic map indicating the exact location of the project (<i>can be a photographic copy</i>)	<input type="checkbox"/>	<input type="checkbox"/>
6.3	Photographs of the resource(s) proposed for alteration with location description (<i>photo locations should be noted on map</i>)	<input type="checkbox"/>	<input type="checkbox"/>
6.4	A narrative description of the existing stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	<input type="checkbox"/>	<input type="checkbox"/>
6.5	A narrative description of the proposed stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	<input type="checkbox"/>	<input type="checkbox"/>
6.6	In the case of wetlands, include a wetland delineation with delineation forms and site map denoting location of data points	<input type="checkbox"/>	<input type="checkbox"/>
6.7	A copy of all hydrologic or jurisdictional determination documents issued for water resources on the project site	<input type="checkbox"/>	<input type="checkbox"/>

Section 7. Project Rationale		Attached	
		Yes	No
Describe the need for the proposed activity, including, but not limited to, the purpose, alternatives considered, and what will be done to avoid or minimize impacts to streams or wetlands.		<input type="checkbox"/>	<input type="checkbox"/>

Section 8. Technical Information		Attached	
		Yes	No
8.1	Detailed plans, specifications, blueprints, or legible sketches of present site conditions and the proposed activity. Plans must be 8.5.x 11 inches. Additional larger plans may also be submitted to aid in application review. The detailed plans should be superimposed on existing and new conditions (<i>e.g., stream cross sections where road crossings are proposed</i>)	<input type="checkbox"/>	<input type="checkbox"/>
8.2	For both the proposed activity and compensatory mitigation, provide a discussion regarding the sequencing of events and construction methods	<input type="checkbox"/>	<input type="checkbox"/>
8.3	Depiction and narrative on the location and type of erosion prevention and sediment control (EPSC) measures for the proposed alterations	<input type="checkbox"/>	<input type="checkbox"/>

Section 9. Water Resources Degradation (degree of proposed impact) <i>Note that in most cases, activities that exceed the scope of the General Permit limitations are considered greater than de minimis degradation to water quality.</i>	
My activity, as proposed:	
a.	<input checked="" type="checkbox"/> Will not cause measurable degradation to water quality
b.	<input type="checkbox"/> Will only cause de minimis degradation to water quality
c.	<input type="checkbox"/> Will cause more than de minimis degradation to water quality (<i>Complete additional sections 9-11</i>)
d.	<input type="checkbox"/> Unsure/need more information
<p><i>For information and guidance on the definition of de minimis and degradation, refer to the Antidegradation Statement in Chapter 0400-40-03-.06 of the Tennessee Water Quality Criteria Rule: https://www.tn.gov/sos/rules/0400/0400-40/0400-40-03.20131216.pdf. For more information on specifics on what General Permits can cover, refer to the Natural Resources Unit webpage at http://www.tn.gov/environment/permits/arap.shtml</i></p>	

If you checked "c." above in Section 9, complete the following 2 sections, 10-11.

Section 10. Detailed Alternative Analysis		Attached	
		Yes	No
10.1	Analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives	<input type="checkbox"/>	<input type="checkbox"/>
10.2	Discuss the social and economic consequences of each alternative	<input type="checkbox"/>	<input type="checkbox"/>
10.3	Demonstrate that the degradation associated with the preferred alternative will not violate water quality criteria for uses designated in the receiving waters, and is necessary to accommodate important economic and social development in the area	<input type="checkbox"/>	<input type="checkbox"/>

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Section 11. Compensatory Mitigation		Attached	
		Yes	No
11.1	A detailed discussion of the proposed compensatory mitigation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.2	Describe how the compensatory mitigation would result in no net loss of resource value	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.3	Provide a detailed monitoring plan for the compensatory mitigation site	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.4	Describe the long-term protection measures for the compensatory mitigation site (e.g., deed restrictions, conservation easement)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Certification and Signature

An application submitted by a corporation must be signed by a principal executive officer; from a partnership or proprietorship, by the partner or proprietor respectively; from a municipal, state, federal or other public agency or facility, the application must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee.

"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury".

Parker Bartholomew	Registered Agent		8/12/16
Printed Name	Official Title	Signature	Date

Submitting the form and obtaining more information Note that this form must be signed by the principal executive officer, partner or proprietor, or a ranking elected official in the case of a municipality; for details see **Certification and Signature** statement above. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed ARAP Application form (keep a copy for your records) to the appropriate EFO for the county(ies) where the ARAP activity is located, addressed to **Attention: ARAP Processing**. You may also electronically submit the complete application and all associated attachments (e.g., maps, wetland delineations and narrative portions) to waterpermits@tn.gov.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	1301 Riverfront Pkwy., Ste. 206	37402
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601



OFFICIAL STATE USE ONLY

Received Date: 8/25/16	Permit Number: NR1603.164	Reviewer:	Field Office: KEFO
Fee amount paid: To Nash.	T & E Aquatic Flora and Fauna:	Impaired Receiving Stream:	Application Review:
Date: 8/25/16			<input type="checkbox"/> Deficient Date: _____ <input type="checkbox"/> Complete Date: _____
Check #: To Nash.	Exceptional TN Water:		

Section 6: Project Description

6.1 *A narrative description of the scope of the project*

The parcel deed for 1810 N. Broadway includes a maintenance agreement in place to protect the stream bank from continued erosion. The maintenance agreement specifically requires the parcel owner to adequately stabilize the stream bank from the water's edge to the 904-ft MSL elevation. A recent change in land ownership, and a renewed interest in leasing office space on site, has left the owner in a place where occupancy certifications will only be granted when a stream bank mitigation plan is in place.

This ARAP permit application is being requested to stabilize ~200 feet of First Creek as it runs along 1810 N. Broadway in Knoxville, Tennessee. Restoration activities will be focused on the destabilized, and actively eroding stream banks on this section of First Creek. The current condition of the site is poor in that kudzu inhibits visual recognition of a steep and destabilized hillside.

The Scope of this project includes hard armoring the toe of slope, located at the bank full line, with large boulders. The boulders are 4-8 feet in diameter, and are being provided by the City of Knoxville. Two rows of these large stones will line the toe of slope and protect the rest of the restoration efforts in this highly urbanized watershed. Class 4 rip rap will be laid behind the boulders, and will cover the slope up to the 904-ft MSL elevation. Minor grade work will be required, and geotextile fabric will be laid under the limestone rock to maximize the effectiveness of the restoration effort.

6.2 *USGS topographic map indicating the exact location of the project (can be photographic copy)*

Please see attached USGS topographic map indicating the exact location of the project (**Figure 1**).

6.3 *Photographs of the resource(s) proposed for alteration with location description (photo locations should be noted on map)*

Photos of the current site conditions can be found in **Appendix A**.

6.4 *A narrative description of the existing stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width)*

Eroding stream banks along First Creek in Knoxville have been contributing sediment to an impaired stream over many years. Steep slopes and a highly urbanized watershed have exasperated the erosive forces on First Creek's stream banks; the destabilized section of stream needs mitigation/restoration to reduce pollutant loading to a stream listed on the 303(d) list for sedimentation.

Rill and gully formation has left the destabilized section of the right descending bank in need of attention. The slope leading to the edge of the stream ranges from 1:1 to 0.75:1 (horizontal:vertical). The length of the stream bank stabilization project is ~200 feet (150 feet of disturbed section, and minor work needed at transition zones).

First Creek is a third order stream that discharges in Fort Loudon Reservoir. The stream is listed on the 2014 303(d) list for a variety of pollutants including "loss of biological integrity due to siltation" for multiple sources including MS4 discharges and urbanization.

6.5 *A narrative description of the proposed stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation*

The proposed alterations will include pulling back stream bank slopes to as gentle a slope as possible. The boundary control points for grading activities are the bank full line (~895-ft MSL elevation), and the 904-ft MSL elevation. Geotextile fabric will be laid down before large limestone rock armors the stream banks and associated side slope. Design specs can be found in **Appendix B**.

6.6 *In the case of wetlands include wetland delineation with delineation forms and site map denoting location of data points*

No wetlands were documented during the site investigation.

6.7 *A copy of all hydrologic or jurisdictional determination documents issued for resources on the project site.*

First Creek is a jurisdictional water course, and a hydrologic determination has not been performed.

Section 7: Project Rational

This stream bank stabilization effort is being conducted to remediate an existing erosion problem. By stabilizing the stream bank, the permittee and City of Knoxville officials are hoping to reduce sediment loading to an impaired waterway.

Section 8: Technical Information

8.1 *Detailed plans, specifications, blue prints, or legible sketches of present site conditions and the proposed activity. Plans must be 8.5x11 inches. Additional larger plans may also be submitted to aid in*

application review. The detailed plans should be superimposed on existing and new conditions. (e.g., stream cross sections where road crossings are proposed)

Please see attached plans for the existing and proposed conditions.

8.2 *For both the proposed activity and compensatory mitigation, provide a discussion regarding the sequence of events and construction method.*

The sequencing of this project is very important, and will be conducted in phases. Initially, managing a severe kudzu infestation during winter months is required. Herbicides will be applied in accordance with manufacturer's labeling/instructions and will not be used in the areas immediately adjacent to flowing water.

Once the vegetation on site has been cleared, minor grading will be initiated. When expecting a minimum of 3 days of dry weather conditions, the rills and gullies will be dressed and smoothed over in preparation of the armament of the slope. The minor grading activities will be reduced to the minimum necessary to complete the job; earthwork will be conducted between the bank full line and the 904-ft MSL elevation.

Placement of geotextile fabric and large-diameter boulders will be the next phase of the restoration effort. City of Knoxville officials have agreed to supply the permittee with large boulders ranging in size, but up to 8 feet in diameter. The largest of these rocks will be selectively placed at the toe of the slope (not within the stream, but anchored into the stream bank). A second row of large boulders will be placed behind the first row to increase the long-term stability of the stabilization project.

Class 4 rip rap, with underlain geotextile fabric, will backfill the remaining area within the project footprint. City of Knoxville officials have attempted to stabilize this slope in the past using a variety of materials, including bioengineering. Multiple failed attempts of incorporating trees with class 4 rip rap have washed away during flashy storm events. Since urbanization is increasing in this watershed, this hard armament approach, using extremely large limestone boulders, is the best option for the long-term viability of this restoration effort.

8.3 *Depiction and narrative on the location and type of erosion prevention and sediment control (ESPC) measures of the proposed Alterations.*

A single row of silt fencing at the toe of the graded slope and a shortened window of gradework are the primary EPSC BMPs. The geotextile fabric and hard armament will be installed immediately after the grading activities, and bare soils should not be exposed to any storm events.

Section 9: Water Resource Degradation

This project will not cause measurable degradation to water quality.

Section 10: Detailed Alternative Analysis

NA

Section 11: Compensatory Mitigation

NA

Figures



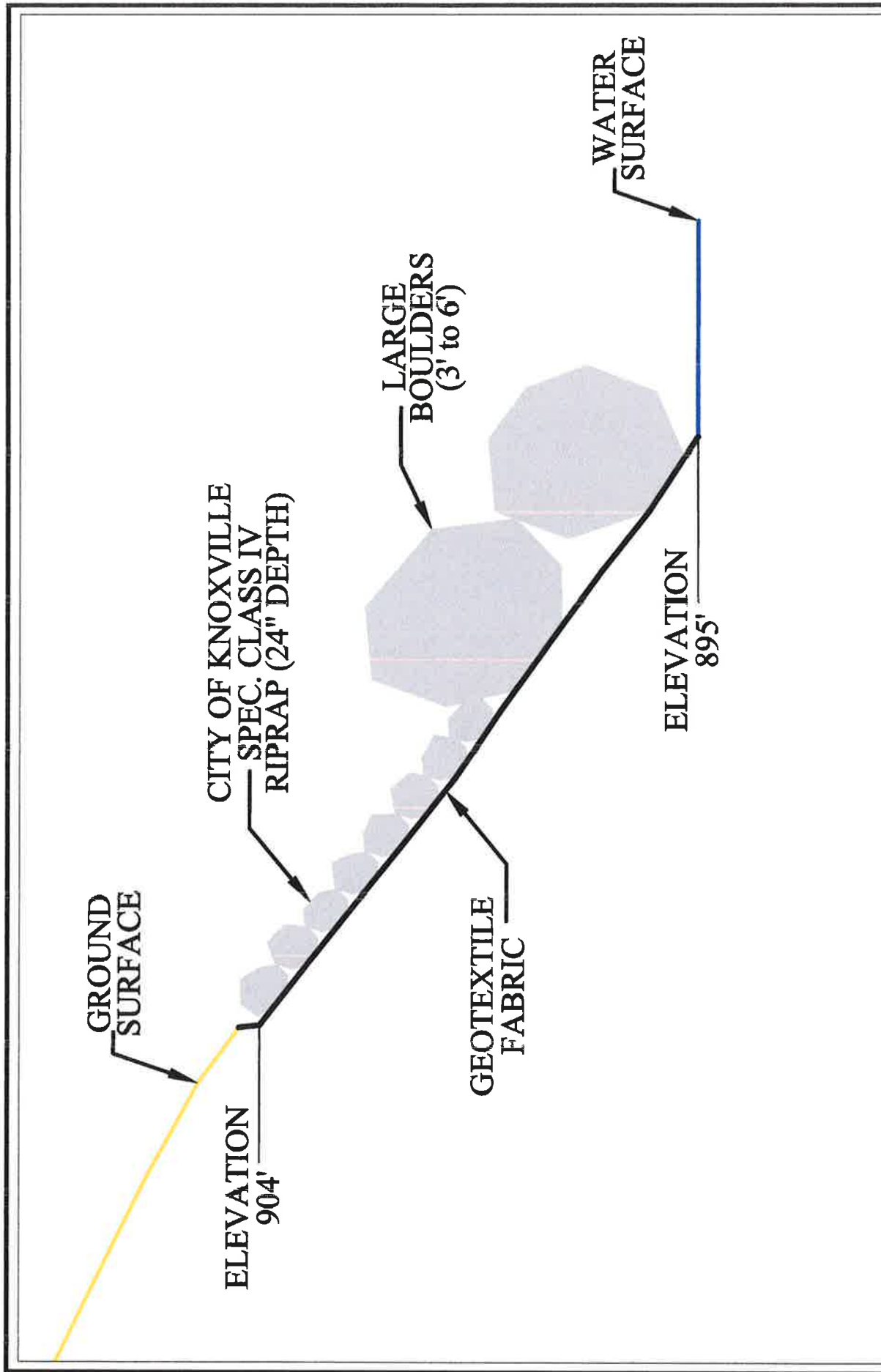
SCALE: NTS

SEW

2651 Willow Pond Way
Kearneyville, Tennessee 37931
Phone: (865) 539-4242
Fax: (865) 539-4152

SITE PLAN
FIRST CREEK STABILIZATION PLAN
1810 NORTH BROADWAY
KNOXVILLE, TENNESSEE

JOB NO:



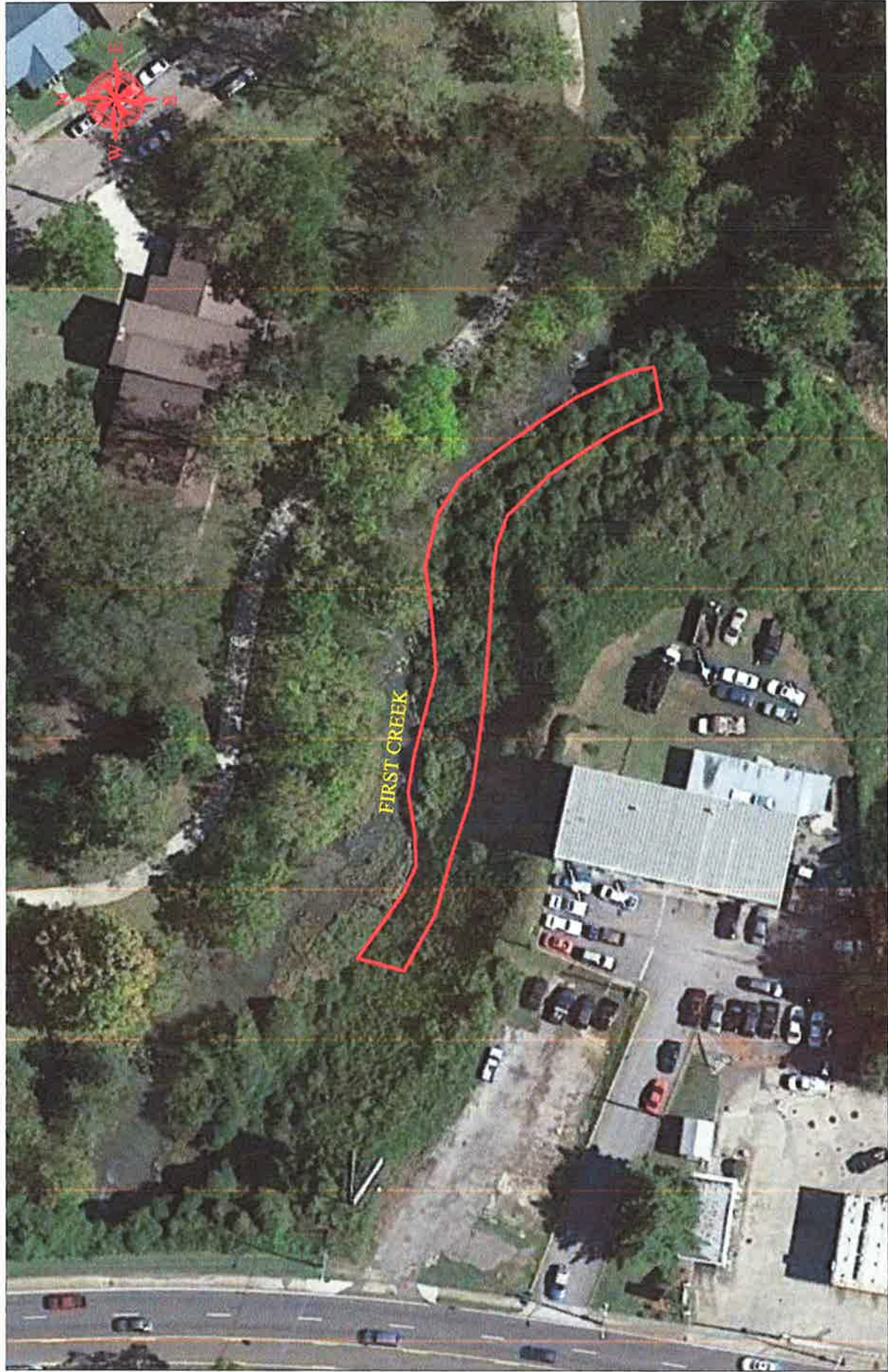
Note:
 Riprap placement in accordance with Table ES-23-2
 from the City of Knoxville BMP Manual
 Erosion & Sediment Control May 2003

SCALE:	NTS
CHECKED BY:	PD
DRAWN BY:	CSG
DATE:	6-24-16

GEOS
 GEOServices, LLC-Geotechnical and Materials Engineers
 2601 Wilshire Point Way
 Knoxville, Tennessee 37931
 Phone: (865) 538-8242
 Fax: (865) 538-4552

SITE PLAN
 FIRST CREEK STABILIZATION PLAN
 1810 NORTH BROADWAY
 KNOXVILLE, TENNESSEE

JOB NO:



SCALE: NTS
CHECKED BY: PD
DRAWN BY: CSG
DATE: 6-24-16

GEOS
GEOServices, LLC-Geotechnical and Waterfalls Engineers
2601 William F. Hall Way
Knoxville, Tennessee 37931
Phone: (865) 539-4204
Fax: (865) 539-4254

SITE PLAN
FIRST CREEK STABILIZATION PLAN
1810 NORTH BROADWAY
KNOXVILLE, TENNESSEE
JOB NO:



SCALE:	NTS
CHECKED BY:	PD
DRAWN BY:	CSG
DATE:	6-24-16

GEOS
 GEOServices, LLC-Geotechnical and Marine Engineers
 2651 Wilshire Field Way
 Knoxville, Tennessee 37931
 Phone: (603) 258-4292
 Fax: (603) 258-4232

SITE PLAN
 FIRST CREEK STABILIZATION PLAN
 1810 NORTH BROADWAY
 KNOXVILLE, TENNESSEE

JOB NO:

Appendix A

Photo Log



Photo 1: First Creek stream bank needing stabilization (kudzu covers unstable area)



Photo 2: First Creek stream bank needing stabilization (kudzu covers unstable area)

Appendix B

Design Specs

